

Blackfoot reflexes of Proto-Algonquian clusters in *ʔ and *h

Natalie Weber
15 October 2016

1 Overview¹

- Survey of Blackfoot (Bf) reflexes of Proto-Algonquian (PA) clusters in *ʔ and *h.
- PA *ʔ is preserved as a glottal stop before *s, *θ and *r. This contradicts Berman's (2006) claim that the first member of true PA clusters always reduces to Blackfoot *h or *ss.
- Conclusion: clusters in Blackfoot preserve distinctions that are neutralized elsewhere.
 - But the shared archaisms in this paper do not comprise evidence of a Proto-Algonquian subgroup which excludes Blackfoot, such as that proposed in Goddard (2015).
 - Future research on other clusters in Blackfoot is needed.

2 Previous accounts of PA clusters in Blackfoot

- Clusters of true consonants (excluding *w and *y) in PA are marked by ✓ in Table 1. (First member of cluster on left; second member of cluster across top.)

Table 1: Proto-Algonquian clusters (after Goddard 1979: 71)

	p	k	t	č	s	š	θ	r
ʔ	–	–	–	–	–	–	–	–
h	✓	✓	✓	✓	✓	✓	✓	✓
m/n	✓	✓	✓	✓	✓	✓	✓	✓
s	✓	✓	–	–	–	–	–	–
š	✓	✓	1	–	–	–	–	–
θ	✓	✓	–	–	–	–	–	–
č	✓	✓	–	–	–	–	–	–
r	–	✓	–	–	–	–	–	–

¹I am indebted to several formative conversations about Algonquian historical phonology with Richard Rhodes, Ives Goddard, David Pentland, Rose-Marie Déchaine, Donald Frantz, Inge Genee, and Conor Quinn. Any mistakes here are surely my own. **Abbreviations:** A = Aubin (1975), Br = Berman (2006), H = Hewson (1993); Bf = Blackfoot, PA = Proto-Algonquian; NF = non-finite, < > is used around original, non-standardized transcriptions, * = reconstructed proto-form, > = changed to, < = changed from.

- Note: most reconstructions of *Cč are due to palatalization of *t before *i.
- Cells with '1' are clusters reconstructed on the basis of one set of cognates only.
 - *hr needed for Cree-Montagnais reflexes of *re'hre'wa 'he breathes'
 - *št needed for Ojibwa *štikwa'n 'his head' (Bloomfield 1946: 88, 90), although Pentland (1977) has argued this is a loan from Cree.
- In addition, *Hm has been reconstructed in certain inflectional suffixes.
- Blackfoot reconstructions in Berman (2006), Goddard (2015), Proulx (1989, 2005), & Taylor (1960). Explanations of sound changes in Berman (2006) and Proulx (1989)
- Berman (2006) is the most accurate. Contains regular sound changes, some of which replace older hypotheses.
 - 'In a cluster of true consonants, the first consonant becomes *h*, except after PA *i, *i', or initial *e, where it becomes *ss* and the preceding vowel is shortened by one mora' (Berman 2006: 266).
 - * PA *a'ʔte- 'extinguish' > Bf -*waahtsii*- VTA 'extinguish (fire, light) (Br24)
 - * PA *no'ntawe'wa 'he hears him', *no'ntamwa 'he hears it' > Bf -*yooh-to*- TA, -*yooh-tsi*- TI 'hear (Br17)
 - * PA *ešp- 'high' > Bf -(i)*ssp*- adt. 'up, high' (Br26)
 - Table 2 shows the number of reconstructions in Berman (2006) containing each cluster

Table 2: Number of Blackfoot reconstructions containing PA clusters from Berman (2006)

	p	k	t	č	s	š	θ	r
ʔ	–	–	2	0	0	0	1	1
h	0	1	1	0	0	0	0	0
m/n	0	2	6	0	0	0	0	0
s	3	2	–	–	–	–	–	–
š	1	2	1	–	–	–	–	–
θ	0	2	–	–	–	–	–	–
č	0	0	–	–	–	–	–	–
r	–	2	–	–	–	–	–	–

- Lots of gaps! (This paper focuses on the zeros in the first two rows.)
- The same holds for Proulx (1989), Taylor (1960), but...
 - Proposed sound changes are not always regular. Some reconstructions are suspect.
 - * Example: Taylor (1960: 13) relates PA *keʔči 'much, greatly' (A760) to Bf <akóxtsi> 'far' from Uhlenbeck (1934?). Synchronic analysis shows that -*oohtsi* is a root-attaching locative suffix. Another likely reflex is *a'kóóht-* 'at a distance' (Frantz & Russell 1995), but since the initial *a'* and presumed rounding *e to *o* are irregular and have no explanation, this is not likely to be a reflex of PA *keʔči.

- Proulx (1989) uses an unusual set of symbols for reconstructions, and comparison of his claims to others can be difficult.
- Both Taylor (1960) and Proulx (1989) propose reconstructions relating PA clusters in *ʔ to Blackfoot clusters beginning with a glottal stop. If true, this would contradict Berman’s claim.
- Ultimately, I show that Taylor (1960) and Proulx (1989) are correct, and some clusters in *ʔ preserve the glottal stop.
- I give a brief overview of historical sound changes in Blackfoot before discussing the survey.

3 Blackfoot historical phonology

3.1 Vowel syncope

- Reflexes of clusters are partially obscured by a later process of vowel syncope in Blackfoot.
- ‘If the vowels in the first two syllables of a word are both short and are separated by a single consonant. . . , the second vowel is deleted and the resulting consonant cluster is simplified’ (Berman 2006: 266).
- (Other vowels are also lengthened, shortened, or deleted, but the rules are unclear.)
- Two cases:
 1. Two singleton consonants: the first consonant assimilates completely to the second consonant, forming a geminate (Thomson 1978: 250; Proulx 1989: 56ff; Berman 2006).

PA	Gloss	Bf	Gloss	(Proulx 1989: 57)
*ketem-	‘miserable’	<i>kimm-</i>	‘pity’	
*temi-	‘deep’	<i>immi-</i>	‘deep’	
*pen-	‘down’	<i>inn-</i>	‘down’	
 2. Singleton consonant plus a cluster: the resulting cluster simplifies to ’C (Berman 2006). The final C is always the same as the final C in the original cluster.

PA	Gloss	Bf	Gloss	
*-erent-	TI ‘by thought’	<i>-i’tsi-</i>	VTI ‘by thought’	(Goddard 2015)
*atehterwi	‘it is ripe, dyed’	<i>-i’tsii-</i>	VII ‘be ripe, be cooked’	(Br12)
*atehsamwa	‘he dyes it’	<i>-i’si-</i>	VTI ‘dye’	(Br12)
*tepeskwi	‘it is night’	<i>ko’kóyi</i>	‘last night’	(Br66)
*meθenkwi	‘armpit’	<i>mo’ksísi</i>	‘armpit’	(Br103)
*metempi	‘brain’	<i>mo’pi</i>	‘brain’	(Br107)
*meθenčyi	‘hand’	<i>mo’tsísi</i>	‘arm, hand’	(Br108)

- Problem: this situation happens a lot!

- The reflex of the first member of the cluster is obscured.
- But the reflex of the second member of the cluster can still be determined.

3.2 Other sound changes

- This is necessarily sparse. See Berman (2006) and Proulx (1989) for details.
- Vowel qualities are lost or changed:
 - Initial PA *e becomes *i* and has the same morphophonemic treatment as *i > *i*.
 - Medial PA *a, *e become *i* but differ in morphophonemic treatment from *i > *i*. Medial *e’ becomes *ii* but differs in morphophonemic treatment from inherited *i’ > *ii*.
 - PA *awa > *oo*. The vowels PA *a, *e round to *o before an *o, *o’ or *k(w), but these changes may have taken place at different times, as there are occasional exceptions.
- Contrast among coronals is lost word-initially and intervocally:
 - Intervocalic PA *s becomes *hs* and is treated the same as *hs > *hs*.
 - Initial *s, *š, *č, *r, merge to *s*.
 - Medial *š *t, *č, *r, *θ merge to *t*.
- Assibilation
 - *t assimilates to *ts* before an *i* or *i’* from any source.
 - *k assimilates to *ks* before *i or *i’ (but not *e or *e’)
- Initial PA *w and post-consonantal *w, *y are lost. Before an *i* from any source, *w > *y*.
- Final *ya, *yi become *sa*, *si* after a vowel, and *isa*, *isi* after a consonant.

4 Survey of cluster reflexes in Blackfoot

4.1 Sources and transcription

- Most Proto-Algonquian reconstructions are taken from Aubin (1975).
 - PA transcription follows Goddard (1994). Differences from Bloomfield (1946) include *ʔ for his *q, *r for his *l, *sC for his *xC, and *rC for his *çC. (Note that Aubin’s *sC corresponds to my *rC.) I have normalized transcriptions from other sources.
- All Blackfoot forms are Frantz & Russell (1995) unless otherwise stated.
 - Standard Blackfoot orthography mostly mirrors IPA, except that long vowels and consonants are written as doubled letters, <y> stands for [j], <’> stands for [ʔ], <ai> stands for [ɛ] or [ej], <ao> stands for [ɔ] or [ow], and <oi> stands for [oj] (Frantz 1978). A syllable with a relatively higher pitch than neighboring syllables is marked with an acute (´) accent, but not all entries in the dictionary have pitch accent marked.
- Reconstructions proposed by others are marked by “(cf. REF)” at the right edge.

4.2 Reflexes of PA clusters in *h

- Summary:
 - After an *i, *i, initial *e (> *i), *hC > ssC and the preceding vowel is shortened by a mora (see: 2, 3, 7, 11, 12).
 - Stem-initially after *e, *hC > ssC but the preceding vowel does not shorten (see: 11).
 - *hr > t
 - Otherwise *hC > hC.

4.2.1 Reflexes of PA *hp

- (1) PA *mexpani ‘lung’ (Br110) > Bf *mohpíni* ‘lung’ (cf. Proulx 1989)
The possessive suffix *me- is reshaped to *mo-* (Berman 2006)

4.2.2 Reflexes of PA *hk

- (2) PA *ehkwa ‘louse’ (A284) > Bf *skína’sa* ‘louse’ (cf. Taylor 1960: 21)
This word has an addition of *-a’s* or *-s* (diminutive?)
- (3) PA *ki·hka- ‘berate’ > Bf *ksisskámmissa* ‘display dislike towards him!’ (cf. Br60)
The reconstruction is from Berman (2006); note that H1178 lists PA *ki·hk- ‘berate, injure, spite, suffer’ without the postinitial *a. Blackfoot includes the VTA final *-imm* ‘by thought’, and the long *a is shortened before the geminate.
- (4) PA *-hka:so AI *hka:n NF ‘pretend, imitation’ (Hewson n.d.[b]: #210) > Bf *-hka’si* VAI ‘behave in such a way’
The right edge of the final has been reshaped, possibly including the VAI final *-a’si*.
- (5) PA *-a·hkiw- ‘hill’ (Hewson n.d.[b]: #6) > Bf *-ahko* ‘land’
The Blackfoot form cannot be from PA *-aski- ‘land’ (A225) unless vowel lengths changed in pre-Blackfoot. Medial *a* is from PA *a. Final *iw evidently rounds to *o*.

4.2.3 Reflexes of PA *ht

- (6) PA *htawak(ay)i ‘ear’ (A417), PA *mehtawaki ‘ear’ (Goddard 1982: 26)
> Bf *mohtóókisi* ‘ear’ (cf. Br100)
The Blackfoot includes the bodypart suffix *ay- > *-is-*.

4.2.4 Reflexes of PA *hs

- (7) PA *nemihsa ‘my older sister’ (A1437) > Bf *nímssa* ‘daughter-in-law’ (cf. Taylor 1960)
The cluster *hs became *ss* after *i and the preceding *i was shortened by a mora.
This etymology is much more likely than Proulx’s (1989) suggestion of PA *-ʔemehsa ‘daughter-in-law, cross-niece’, which would involve irregular sound changes.

- Vowel syncope obscures the first half of this cluster.

- (8) PA *apehs- ‘small’ (Hewson n.d.[a]) > Bf *a’s-* ‘small, young’

- An intervocalic *s > *hs* and is treated the same as original PA *hs.

- (9) PA *mesiči ‘foot’ > Bf *mohsistsíikina* ‘hoof/horseshoe’ (cf. Br106)
The Blackfoot adds *-ikin* from PA medial *kan.

- (10) PA *-so·wi ‘tail’ > Bf *mohsoyísi* ‘tail’ (cf. Proulx 1989)
The PA reconstruction is from Proulx (1989). The addition of final *s* is possibly from the bodypart medial *ay- > *-is-*, as from PA *-so·wayi ‘tail’.

- Usually intervocalic *š > *t*, but here *š > *hs* and is treated the same as original PA *hs. Perhaps the environment where *š > *s* is not word-initial, but stem-initial. It is unknown whether this is a regular change.

- (11) PA *nešihsa ‘my mother’s brother’ (Goddard 1979: 92) > Bf *nissíssa* ‘my (female) younger sibling’, Bf *ohsíssa* ‘her (female) younger sibling’
The *hs* cluster in this word exhibits synchronic alternation to *ss* after *i*.

4.2.5 Reflexes of PA *hθ

- (12) PA *-kyi·hθa ‘mother’ > Bf *niksissta* ‘my mother’ (cf. Proulx 1989)
Proulx (1989) reconstructs the non-diminutive form of ‘mother, have a mother’ as *-kyahθa, *-kyahšiya. However, the Blackfoot is as if from *-kyi·hθa (initial change?).

- (13) PA *mehθe ‘firewood’ (H1732) > Bf *ohkohtaa* VAI ‘gather firewood’
The *ohk-* prefix is of unknown etymology. Blackfoot verb uses a non-initial form of ‘firewood’ which lacks the initial *m. Short *e rounded to *o*, perhaps because it follows a labial consonant. The VAI final *-e* was replaced by VAI *-aa*.

4.2.6 Reflex of PA *hr

- The cluster *hr is required only by the Cree-Montagnais reflexes of PA *re·hre·wa ‘he breathes’ (Bloomfield 1925: 153).
 - To this we can add the Blackfoot reflexes, which are distinct from reflexes of *hθ.
- (14) PA *re·hre·wa ‘he breathes’ (A1151) > Bf *saitamit* AI ‘breathe!’ (Northern Peigan), *siitamit* AI ‘breathe!’ (Blood)
- Blackfoot uses the AI final *-ami* (‘be’?) instead of a reflex of PA *-e·. The normal reflex of *e· is *i·*, but Northern Peigan has *ai* [ɛ·] in the first syllable.

4.3 Reflexes of PA clusters in *ʔ

- Summary:
 - After an *i, *i·, initial *e (> *i), *ʔt > *sst* and the preceding vowel is shortened by a mora (see: 19, 20). Otherwise, *ʔt > *ht*.
 - *ʔs, *ʔθ, *ʔr > ‘s
 - The reconstructions for *ʔš and *ʔč involve reduplications, and the sound changes *ʔš > *s* and *ʔč > *tt* are circumspect.

4.3.1 Reflexes of PA *ʔt

- (15) PA *a·ʔte·wi ‘extinguish’ (A174) > Bf *-waahtsü-* VTA ‘extinguish’ (cf. Br24)

- (16) PA *aʔte·we ‘it is in place’ (A174) > Bf *-ihtsiwa* ‘be in such a position’

This form has become a final in Blackfoot and requires a root or stem at the left edge, as in *sáókihtsiwa* ‘it is flat, horizontal’ (root *saok* ‘flat, straight’, found in *saoki* ‘flat, prairie’), *ááwoyihtsiwa* ‘it is not at a right angle’ (*waawow* ‘uneven, misaligned, reversed’).

Consequently, the initial *i* is a reflex of medial *a, not initial *a.

- (17) PA *aʔta·wa ‘he places it, has it’ (A171) > Bf *-ohtoowa* ‘he places it’

This form has become a final in Blackfoot and requires a root or stem at the left edge, as in *saokhohtóót* ‘straighten it out!’ (*saok* ‘flat, straight’), *ínsstawohtoot* ‘make it tidy!’ (*insstaw* ‘tidy’), *itsínohtoot* ‘place it among the rest!’ (*itsin* ‘among’).

Consequently, the initial *i* is a reflex of medial *a, which rounds to *o* before *oo. Blackfoot has generalized *-oo* as the theme sign in TI-2 stems.

- (18) PA *peʔt- ‘by accident, by mistake’ (A1847) > Bf *paht-*, *ipaht-* ‘false, mistaken, erroneous, imitation’ (cf. Br48)

The reflex with a long vowel is found in nouns: *paahtsúistsikomma* ‘osprey’ (lit. ‘false thunder’), *paahtsúisipisttoowa* ‘long-eared owl’ (lit. ‘false owl’).

The change of *e > *a· is not unique but remains unexplained (see Berman 2006).

- (19) PA *pi·ʔt- in *pi·ʔte·wi ‘froth, foam’ (A1883) > Bf *pisst-* (cf. Taylor 1960: 16)

Blackfoot examples include *pistsitsínattsiw* ‘foamy, it looks like foam’ (Taylor 1960), *pisstskíáʔtavi* ‘bay (landform)’ (Frantz & Russell 1995).

- (20) PA *sakiʔtanro ‘bite it!’ (Goddard 2015) > Bf *sikstít* ‘bite it!’ (cf. Goddard 2015)

Goddard (2015) notes that the VTI final *-i-ʔt ‘‘by mouth’’ is often regularized to *-i-pot. The VTA stem in Blackfoot still reflects *-i-pw ‘by mouth’: *sakupw- ‘he bites him’ > Bf *siksip-* ‘he bit him’ (Berman 2006).

4.3.2 Reflexes of PA *ʔč

- This cluster is rare, because Blackfoot reflexes of roots with final *t rarely include the reflex of a following connective *i.

- (21) PA *či·ʔči·k- (reduplicated from *či·k- ‘scratch’) (Pentland 1977: 155) > Bf *sattsikanoʔto-* (VTA), *sattsikanoʔtaki-* (VAI+O) ‘scratch’

The first vowel exhibits an old form of initial change from *i· > *a·, with subsequent vowel shortening before the geminate consonant. The change of the second long *i· to a short *i* may be part of the pattern of vowel syncope found in Blackfoot. Berman (2006: 67) discusses two forms where the reflex of PA *č(y) is *tt*: PA *mači- ‘bad’ > Bf *mattsi-* ‘bad, crazy’, and the medial PA *-ečye- ‘belly’ > Bf ‘belly’-ittsi-. Perhaps clusters ending in *č(y) also undergo this change.

Although Pentland (1979: 374) discusses this reduplicated form only in terms of the noun PA *ci·ʔci·kwama ‘wart’, in Blackfoot it occurs in a verb reflecting the older meaning of the root PA *či·k- ‘scratch’. Lexical archaism?

4.3.3 Reflexes of PA *ʔs

- (22) PA *seʔsw- ‘scatter, sprinkle’ (H2972) > Bf *soʔsatóót* ‘sprinkle liquid on it!’

Medial *e apparently rounds to *o* before the labialized cluster *ʔsw, and post-consonantal *w later deletes. This stem includes the common VTI final *-atoo*.

- (23) PA *nekwiʔsa ‘my son’ (A1422) > Bf *nókoʔs-a* ‘my child’ (cf. Taylor 1960: 27)

Medial PA *e rounds to *o* before a labialized consonant. This reconstruction requires a later sound change of PA *kwi > *ko*. However, note that *wi does not change to *o* after *t, as in PA *mi·twiya ‘quaking aspen’ > Bf *miistsísa* ‘tree’ (Proulx 1989).

4.3.4 Reflexes of PA *ʔš

- Only one plausible reconstruction.

(24) PA *šeʔšekw- (redup. *šekw-) (Siebert Jr 1975) > Bf *sisik-* ‘granular, in pieces’ (Proulx 1989: 50)

The reduction of PA cluster *ʔš to Bf *s* is unique. Perhaps word-initial *s* (< *š) influenced the outcome of the medial cluster in the reduplication.

Proulx gives F *šešekwinane’wa* ‘she crushes her to pieces’ and O *šaššako-* ‘crush’ ‘crush’ [with a-grade vowels]). Related Blackfoot stems include *sisikóóhkotoki* ‘gravel’, *sisikohkotsisa* VTA ‘give him/her change!’, *sisiksiniit* VTI ‘grind it!’, etc.

Medial *e before a labialized consonant normally rounds to *o*, but the relative chronology of rounding w.r.t. other sound changes and reduplication is not well understood.

- Blackfoot *sai’áíwa* ‘duck’ not likely related to *ši’ʔšipa ‘duck’ (A1992).

4.3.5 Reflexes of PA *ʔθ

(25) PA *neʔθ- ‘my older brother’ (A1496) > Bf *ní’s-* ‘my older brother’ (cf. Taylor 1960)

Taylor’s reconstruction here is plausible should supercede the suggestion in Proulx (1989) that *-í’s-* ‘BF’ is a reflex of *-ʔe’nsa, which would require several irregular sound changes, including otherwise unattested *e’ > *i word-medially.

- The following two reconstructions offer only partial evidence.
 - The glottal stop is not a reflex of PA *ʔ; it results from syncope of the preceding short vowel and simplification of the ensuing cluster.
 - But if Bf *s* reflects PA *θ, this is partial evidence that *θ > *s* after *ʔ.

(26) PA *wa’paʔθemwa ‘white dog’ (A2115) > *apí’siwa* ‘coyote’ (cf. Taylor 1960: 33)

The PA initial *aθemwa ‘dog’ (A205) > Bf *imitááwa* ‘dog’ via metathesis of *t and *m (Uhlenbeck 1925). The change of word-initial *a > *i* is irregular, but is recent; Taylor (1960) cites the form *amétou* from Umfreville (1790).

As further evidence, the PA final *-aʔθemwa ‘dog’ (A176) occurs unmetathesized in Bf *apí’siwa* ‘coyote’. (It occurs in no other words.) Initial and post-consonantal *w delete, and medial *a, *e > *i*. Taylor’s suggestion that *m was re-interpreted as a possessor suffix is probable.

(27) PA *ki’seʔθwa ~ *ki’šeʔθwa (Haas 1967) > Bf *ki’somma* ‘sun/moon’

The short PA *e syncopates, and the resulting cluster reduces to ‘s. Long PA *i shortens before a glottal stop. The final *mm* has two possible sources.

One, the final *wa could have been reinterpreted as part of the stem, and the animate

singular suffix *-wa* would have been added, yielding *ki’seʔθwawa or *ki’šeʔθwawa. The second *w* dissimilated to *mm*, and the first *wa > *o* (regular change). Berman (2006) describes a *w > short *m* dissimilatory process, but the consonant length in *ki’somma* is not explained.

Two, *-mm* could be a later addition. There are many animate nouns in Blackfoot which end in *mm*, such as *sisómma* ‘small dog, puppy’ (arch.), *maksísskomma* ‘well, spring’, and *sáóka’simma* ‘root of **Angelica dawsonii*, used for religious and medicinal purposes’ (containing *saok-* ‘prairie’ and *-a’si* ‘root, tuber, Indian turnip’). In many cases, *-mm* is clearly a suffix related to third person animate referents. It either derives an animate noun from a related inanimate noun, or which occurs on VAI stems for third person inflection but not for first or second persons.

ksááhkomma	‘the Earth’	cf. NI ksááhkoyi	‘dirt, land, earth’
kšiistsikómma	‘thunder’	cf. NI kšiistsikóyi	‘day’

áipapomma	‘lightning’	cf. VAI <i>ipapómma</i>	‘there was lightning’
ísaiksisto’simma	‘heat radiator’	cf. VAI <i>iksisto’simma</i>	‘he had a fever’,
		nitsíksisto’si	‘I had a fever’

- Note that Bf *i’nit-* VTA ‘kill’ does not reflect the cluster in PA *neʔθ- ‘kill’. The VAI verb Bf *i’niwa* ‘die’ is a reflex of PA *nepiw ‘die’, and the VTA stem is clearly derived from the VAI stem by an addition of final *-t-*.

4.3.6 Reflexes of PA *ʔr

(28) PA *aʔrapya ‘net’ (A162) > Bf *a’sipísa* ‘thread, sinew used for sewing’.

- The reflex of PA *aʔre’wa ‘he places him’ (A163) has Bf *ht*, not expected ‘s. This is likely due to paradigmatic pressure, because all other forms have *ht* in Blackfoot:

	Bf	Gloss	PA
VTA	<i>-ihtsiwa</i>	‘he places him’	cf. *aʔre’wa (A163)
VTI	<i>-ohtoowa</i>	‘he places it’	< *aʔta’wa (A171)
VAI+O	<i>-ihtaki</i>	‘he places something’	
VAI	<i>-ihtsiwa</i>	‘he is in such a position’	
VII	<i>-ihtsiwa</i>	‘it is in such a position’	< *aʔte’wi (A174)

4.3.7 Indeterminate (*ʔš or *ʔr)

- Br16 gives Bf *-yisstoyi-*, *-isstoyi-* ‘have whiskers, have a beard’ as a reflex of PA *mi’ʔr- ‘hairy’. Aubin lists PA *mi’ši- instead. Either are plausible sources for the Blackfoot.

I do not agree with Berman that this form includes the medial Bf *-oyi-* ‘mouth’, because we have beside it the noun *misstoani* ‘beard’. Synchronically, both stems are built on *misstow-* plus either the VAI final *-i* ‘have’ or the (unproductive) nominalizing suffix *-an*. Then it seems plausible that both were derived from earlier *mi’ʔCi-w-aan and *mi’ʔCi-w-i with subsequent rounding of *i before *w.

4.4 Summary

- Besides *hr > t, the reflexes of clusters in *h are uniformly either *ssC* or *hC*.
 - ssC* after *i, *i, word-initial *e > *i, and one instance after a medial *e where the cluster itself is stem-initial
 - hC* elsewhere
- The reflexes of clusters in *ʔ are more varied.
 - *ʔč and *ʔš are based on one reconstruction each.

Table 3: Summary of Blackfoot reflexes of Proto-Algonquian clusters in *ʔ and *h

	p	k	t	č	s	š	θ	r
h	hp	hk ~ ssk	ht	—	hs ~ ss	—	hθ ~ ssθ	t
ʔ	—	—	ht ~ sst	tt	ʔs	s	ʔs	ʔs

5 Discussion

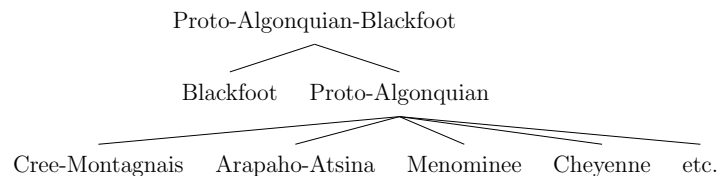
5.1 Shared phonological archaisms

- Goddard (1994) shows that Algonquian languages form a dialect continuum with the greatest time-depth in the west and the shallowest in the east.
 - He discusses multiple dialectal groupings, based on shared archaisms and shared neutralizations of PA sounds.
 - Blackfoot is hardly discussed, mostly because the historical phonology of Blackfoot was not well-understood.
- Blackfoot does share many of the diagnostics from Goddard (1994):
 - Clusters in *ʔ remain distinct from clusters in *h. (Except for *ht and *ʔt.)
 - Shared with: Arapaho-Atsina, Cree-Montagnais, Cheyenne, and Menominee
 - The Eastern Algonquian languages only preserve this contrast with *ʔr versus *hr.
 - *r and *θ remain distinct following *h.
 - *θ and [r] otherwise merge in Blackfoot to *s* word-initially and *t* intervocally.
 - Shared with: Arapaho-Atsina and Cree-Montagnais, which maintain the contrast between *r and *θ everywhere.
 - *ʔr and *hr are distinct in Blackfoot: *ʔr > ʔs and *hr > [t]
 - PA *hr > Bf *t* is a unique reflex in Blackfoot, just as the Cree-Montagnais reflexes are (e.g. Plains Cree *ye'hye'w* 'he breathes'). The Blackfoot data supports the reconstruction of *hr to Proto-Algonquian.

- Although many researchers comment on the divergent nature of Blackfoot...
- ...the more we learn about Blackfoot, the more its similarities to other Algonquian languages become apparent (Berman 2006; Bliss, Ritter, & Wiltschko 2010; Déchaine & Weber In press; Déchaine & Wiltschko 2010; Déchaine et al. 2012; Goddard 2015).

5.2 Future research on Blackfoot clusters

- Blackfoot contains lexical archaisms and fails to exhibit some sound changes that other Algonquian languages exhibit. This leads Goddard (1994, 2015) to conjecture that Blackfoot split from Proto-Algonquian very early, and perhaps early enough that Proto-Algonquian-Blackfoot forms a deeper stratum than Proto-Algonquian proper.



- If so, we would expect to find innovations in Proto-Algonquian that Blackfoot *fails* to undergo, or innovations in Blackfoot that the remaining languages *fail* to undergo.
 - So far, I have only found evidence of shared *archaisms*, not *innovations*
 - Correspondence sets of consonant clusters in Algonquian languages have been instrumental in reconstructing Proto-Algonquian (Bloomfield 1925, 1946; Siebert Jr 1941).
 - Maybe a wider survey of clusters might reveal innovations.
- More cases where PA cluster > *ʔC?
 - PA *wešk- 'young, new' > Bf *o'k*- 'raw'
 - PA *kwečpan- 'fear' (Pentland 1979: 383) > Bf *ko'po*- 'fear'
 - Cases with multiple reflexes? (Positional change in Blackfoot?)
 - PA *merk- 'red' > Bf *maohk*- 'red' AND Bf *mi'k*- 'red' (in compounds)
 - Cases of intrusive glottal stop?
 - PA *čya:k- 'burn' (H0583) > Bf *sa'kss*- VTA 'burn someone' (with VTA final *-hs* 'by heat'), Bf *sa'kssoyi*- VAI 'burn or scald oneself' (with VAI final *-hsoyi* 'by heat')
 - Cases where Blackfoot has a cluster but PA reconstruction does not.
 - PA *mekiwa 'he barks' (A1204) > Bf *ohkit* 'bark!', as if from earlier *meXki-
 - PA *watapya 'spruceroom cordage' > Bf *a'pisa* 'rope' (Goddard 1994: 188), as if from PA *wataXpya.

References

- Aubin, George F. 1975. *A Proto-Algonquian dictionary*. (National Museum of Man, Mercury Series, Canadian Ethnology Service Paper no. 29). Ottawa: National Museums of Canada.
- Berman, Howard. 2006. Studies in Blackfoot prehistory. *International Journal of American Linguistics* 72(2): 264–284.
- Bliss, Heather, Elizabeth Ritter, & Martina Wiltschko. 2010. A comparative analysis of theme marking in Blackfoot and Nishnaabemwim. In *Proceedings of the Fifteenth Workshop on Structure and Constituency in Languages of the Americas (WSCLA 15)*. University of British Columbia Working Papers in Linguistics 29.
- Bloomfield, Leonard. 1925. On the sound-system of Central Algonquian. *Language* 1(4): 130–156.
- Bloomfield, Leonard. 1946. Algonquian. In *Linguistic structures of native America*, Bloomfield, L., H. Hoijer, & C. Osgood (eds.), 85–129. (Publications in Anthropology 6). Viking Fund.
- Déchine, Rose-Marie & Natalie Weber. In press. Root syntax: Evidence from Algonquian. In *Papers of the Forty-seventh Algonquian Conference*. (University of Manitoba, Winnipeg, Manitoba, Oct. 22–25, 2015), Macaulay, Monica (ed.). MSU Press. in press.
- Déchine, Rose-Marie & Martina Wiltschko. 2010. Micro-variation in agreement, clause-typing and finiteness: Comparative evidence from Plains Cree & Blackfoot. In *Proceedings of the 42nd Algonquian Conference*, Valentine, J. Randolph (ed.). Memorial University of Newfoundland in October, 2010. SUNY Press.
- Déchine, Rose-Marie et al. 2012. Personal pronouns in Blackfoot and Plains Cree. In *Proceedings of the fortieth Western Conference On Linguistics*, 248–258. California State University, Fresno: Department of Linguistics.
- Frantz, Donald G. 1978. Abstractness of phonology and Blackfoot orthography design. In *Approaches to language, anthropological issues: Papers written for the IXth International Congress of Anthropological and Ethnological Sciences, Chicago, 1973*, McCormack, W. & S.A. Wurm (eds.), 307–325. Mouton Publishers.
- Frantz, Donald G. & N.J. Russell. 1995. *Blackfoot dictionary of stems, roots, and affixes*. University of Toronto Press.
- Goddard, Ives. 1979. Comparative Algonquian. In *The Languages of Native America*, 70–131. Austin/London: University of Texas Press.
- Goddard, Ives. 1982. The historical phonology of Munsee. *International Journal of American Linguistics* 48: 16–48.
- Goddard, Ives. 1994. The west-to-east cline in Algonquian dialectology. *Actes du 25e Congrès des Algonquinistes*: 187–211.
- Goddard, Ives. 2015. *Blackfoot and core Algonquian inflectional morphology: Archaisms and innovations*. Paper presented at the 47th Algonquian Conference.
- Haas, Mary R. 1967. The Proto-Algonkian word for 'sun'. *Contributions to Anthropology: Linguistics I*: 60–5.
- Hewson, John. 1993. *A computer-generated dictionary of Proto-Algonquian*. (Mercury Series, Canadian Ethnology Service Paper no. 125). Hull, Quebec: Canadian Museum of Civilization.
- Hewson, John. n.d.(a). *Proto Algonkian Roots*. URL <http://www.mun.ca/linguistics/people/faculty/protoalgonkian.php>.
- Hewson, John. n.d.(b). *Proto Algonkian Word Formatives*. URL <http://www.mun.ca/linguistics/people/faculty/protoalgonkian.php>.
- Pentland, David H. 1977. Proto-Algonquian *št. *International Journal of American Linguistics* 43(3): 225–226.
- Pentland, David H. 1979. *Algonquian historical phonology*. University of Toronto, Ph.D. dissertation.
- Proulx, P. 1989. A sketch of Blackfoot historical phonology. *International Journal of American Linguistics* 55(1): 43–82.
- Proulx, P. 2005. Initial change in Blackfoot. *Calgary Papers in Linguistics* 26: 1–26.
- Siebert Jr, Frank T. 1941. Certain proto-Algonquian consonant clusters. *Language*: 298–303.
- Siebert Jr, Frank T. 1975. Resurrecting Virginia Algonquian from the dead: The reconstituted and historical phonology of Powhatan. *Studies in southeastern Indian languages*: 285–453.
- Taylor, Allen R. 1960. *Blackfoot historical phonology: A preliminary survey*. Unpublished ms. in the Survey of California and Other Indian Languages, University of California, Berkeley [Haas.068.003].
- Thomson, Gregory E. 1978. The origin of Blackfoot geminate stops and nasals. In *Linguistic studies of Native Canada*, Cook, Eung-Do & Jonathan Kaye (eds.). University of British Columbia.
- Uhlenbeck, CC. 1925. Blackfoot imitá (ua), Dog. *International Journal of American Linguistics* 3(2/4): 236–236.
- Uhlenbeck, Christianus Cornelius. 1934. *A Blackfoot-English vocabulary: based on material from the southern Peigans*. Ams Pr Inc.